

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (Currently Amended): An image recognition method comprising:  
obtaining a deformed image by three-dimensionally deforming a captured range image having three-dimensional information including depth information of an object to be sensed; and  
recognizing three-dimensional motion of an object in the range image by comparing the obtained three-dimensionally deformed image with a newly captured range image.

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Claim 2 (Canceled).

Claim 3 (Canceled).

Claim 4 (Original): A method according to claim 1, further comprising predicting motion of the object on the basis of a feature amount of the object extracted from the captured range image.

Claim 5 (Canceled).

Claim 6 (Canceled).

Claim 7 (Currently Amended): A method according to claim 1, further comprising the step of compressing a range image captured by an image capture unit on the basis of the recognized motion of the object.

Claim 8 (Canceled).

Claim 9 (Currently Amended): An image recognition apparatus comprising:

an image capture unit configured to capture a range image having three-dimensional information including depth information of an object to be sensed;

an image deformation unit configured to three-dimensionally deform the range image captured by said image capture unit; and

A  
a recognition unit configured to recognize three-dimensional motion of an object by comparing a three-dimensionally deformed image obtained by said image deformation unit and a new range image captured by said image capture unit.

Claims 10-15 (Canceled).

Claim 16 (Original): An apparatus according to claim 9, further comprising:

a feature amount extraction unit configured to extract a feature amount of the object from the range image captured by said image capture unit; and

a prediction unit configured to predict motion of the object on the basis of the feature amount extracted by said feature amount extraction unit.

Claims 17-22 (Canceled).

Claim 23 (Currently Amended): An apparatus according to claim 9, further comprising:

an image compression ~~units~~ unit configured to compress the range image captured by said image capture unit on the basis of the recognized motion of the object.

Claims 24-26 (Canceled).

Claim 27 (Currently Amended): An article of manufacture comprised of a computer-usable medium having computer-readable program code means that implements computer-readable program code means for recognizing an image, comprising:

computer-readable program code means for making a computer capture a range image having three-dimensional information including depth information of an object to be sensed;

computer-readable program code means for making the computer three-dimensionally deform the range image captured by the image capture means; and

computer-readable program code means for making the computer recognize the presence/absence of three-dimensional motion of an object by comparing a three-dimensionally deformed image obtained by the image deformation means and a new range image captured by the image capture means.

Claim 28 (Canceled).

Claim 29 (New): An image recognition method according to claim 1, wherein the deformed image is a rotated deformed image.

Claim 30 (New): An image recognition method according to claim 1, wherein the deformed image is moved in parallel.

Claim 31 (New): An image recognition method according to claim 1, wherein the deformed image is contracted by rotation.

Claim 32 (New): An image recognition apparatus according to claim 9, wherein the deformed image is a rotated deformed image.

Claim 33 (New): An image recognition apparatus according to claim 9, wherein the deformed image is moved in parallel.

AI Claim 34 (New): An image recognition apparatus according to claim 9, wherein the deformed image is contracted by rotation.

Claim 35 (New): An article of manufacture according to claim 27, wherein the deformed image is a rotated deformed image.

Claim 36 (New): An article of manufacture according to claim 27, wherein the deformed image is moved in parallel.

Claim 37 (New): An article of manufacture according to claim 27, wherein the deformed image is contracted by rotation.

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